APRIL/MAY 2025

FEL31/CEL41/BEL41 — SEMICONDUCTOR DEVICES AND IC FABRICATION TECHNOLOGY

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

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1. Give the relation between β and α.

2. Write down the equation for collector current.

3. State any two advantages of MOSPET.

4. Mention any two differences between FET and MOSFET.

5. Draw the symbol of SCR.

6. Mention any two applications of UJT.

7. State Schottky effect.

8. What is called CCD?

9. Mention any two advantages of IC.

10. What is MSI IC package?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the working of PNP transistor with neat diagram.

Or

(b) Explain the working of NPN transistor with neat diagram.

12. (a) Explain the working of FET and draw is characteristic curve with neat diagram.

Or

(b) Explain the working of MOSFET and draw is characteristic curve with neat diagram.

13. (a) Explain SCR as a Rectifier.

Or

(b) Explain SCR as a Switch.

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14. (a) Explain the Working principle of LDR.

Or

(b) Explain the working of LED.

15. (a) Write a note on thin film technology.

Or

(b) Write a note on thick film technology.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the performance of transistor as an amplifier and as an oscillator.

17. Explain the applications of FET.

18. Describe the function of UJT

19. Explain the semiconductor LASER diode and give its applications.

20. Explain the process of monolithic IC technology.